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ABSTRACT

Federal legislation mandates that applicants for research and development contracts in vocational education demonstrate a reasonable probability that the contract will result in improved teaching techniques or curriculum materials. To facilitate the impact of research activities, one must develop procedures to predict and assess research impact. At present, the responsibility for impact assessment usually lies with researchers. This causes difficulty for some researchers who fail to see how impact assessment of their individual projects pertains to overall state program goals. Beginning this assessment process with clarification of funding program rather than individual project goals would eliminate this difficulty and foster inter-project linkages. This approach helps eliminate the temptation to fund only low-risk, low-payoff projects, helps establish more realistic and attainable expectations, and encourages multiple-year efforts. Focusing on programs and program goals does not, however, eliminate the need for project designers to determine their own goals and methods for measuring impact. Intended immediate impact should be assessed during the funding life of the project, and long-range impact can be assessed as part of the evaluation of the success of the total program. (A proposed model impact statement is appended.) (MN)

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SPECIFYING RESULTS TO BE EXPECTED THROUGH RESEARCH

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These remarks are based largely on the results of a continuing project funded at the University of Illinois by the Illinois Department of Adult, Vocational, and Technical Education. The official title of the project is "Development of a System for Assessing the Impact of Vocational Education Research and Development on Vocational Education." Our short title is "Project Impact."

(In addition to the many contributions of project staff, I also want to acknowledge the contributions of Ron McCage to the early evolution and subsequent development of the project. His position as director of program improvement in the Department of Adult, Vocational and Technical Education has been filled very ably by John Washburn, who continues to work closely with us, but Ron is the sort of person who can never be replaced. By acknowledging Ron at this point, I am not trying to co-opt him as a discussant. He may very well take issue with some of what I say at this symposium!)

Project Impact to Date

By way of background, you should have a brief review of our progress to date. "Project Impact" is in its third year of funding. The purpose of the project has been to identify and develop procedures for complying with the impact requirements of Public Law 94-482. To this end, "Project Impact" has studied five problems: (1) how to define impact, (2) how to assess impact, (3) how to show cause and effect relationships between R & D activities and changes in the vocational education teaching-learning situation, (4) how to predict the probability of impact, and (5) how to facilitate the impact of R & D activities.

It is the last problem, "how to facilitate the impact of R & D activities", to which we are addressing most of our present efforts. However, we continue to refine our tentative answers to the two problems of "how to assess impact" and "how to predict the probability of impact".

Our thinking is that we need to specify the results to be expected through research efforts before we can attempt to assess impact. We need to specify goals (outcomes to be expected) prior to conducting research and development efforts.

At the present time the responsibility for impact assessment almost always lies with the researchers. In preparing a proposal for vocational education R & D funding in Illinois, researchers are required to include a statement of intended impact of their proposed activity that includes: (1) target populations expected to be affected, (2) quantative efforts expected for each target population, (3) qualitative efforts expected for each target population, (4) the expected time frame for each effect, (5) how the intended impact will be achieved, and (6) methods of measuring/evaluating the activity's impact(s) -- intended and unintended effects, and qualitative and quantitative effects. The researcher, if funded for the activity, is then expected to update the funding agreement's statement of impact with each quarterly progress report. This requirement poses difficulty for some researchers who fail to see how the impact assessment of their individual projects pertains to overall goals of the state department's program. It also poses difficulty for reviewers who rate project proposals without having a personal knowledge of program goals or of how to assess potential impact. Researchers also find it difficult to: (7) predict when the effects of their project activities will peak, and (8) conceive how the long range impact of their work can best be assessed.

In an earlier phase of our work, we concluded that "if educational research is to have positive educational impact, it should be characterized by continuity . . . Almost every project should be part of a coherent program of research in which problems are adequately investigated before solutions are demonstrated. Such programs of research are more likely to have impact if there is continuity of effort on the part of the researchers; continuity of goals and funding on the part of organizations which fund research; continuity of successful research results reported to consumers; and continuity of evaluation" (Cheney-Stern and Evans, 1979, p. 10).

To respond to these concerns of continuity, we are developing a system of assessing the impact of vocational education R & D to be used by all involved, starting with the funder. In our proposed system, each individual project is considered to be part of a larger program as defined by the funder (in our case, this is the R & D section of the Illinois Department of Adult, Vocational, and Technical Education).

Earlier in our research we were involved in the "top-down" and "bottom-up" tracking of the outcomes of groups of projects which we called "programs". For example, we looked at a group of projects which were all concerned with instruction in vocational agriculture. Later, we came to the conclusion that our groupings were somewhat artificial. Some of the project directors saw their own projects as part of a personal research program, but generally, neither the project directors nor the staff of the funding agency saw the grouping of projects into "programs" in the same way that we did. Since then, we have come to believe that program goals and program components for the research and development activities supported by each funding agency should be defined by that agency. Each program is defined as a group of R & D program improvement projects which is seen by the funder as having common or related goals. The intended program impact (long range) is based, therefore, on the degree of achievement of similar goals by individual projects. It is unlikely that these goals could be achieved totally by any one project. Short term (interim) intended impact is based on the achievement of individual project goals during the duration of the funded efforts. In addition to intended impacts, all of which are likely to be positive, there are unintended impacts, which may be either positive or negative. Outcomes of programs are the algebraic sum of the contributions (intended and unintended) made by all of the individual projects within that program. The sum of the contributions of each of the R & D agency's programs constitutes the impact of that agency.

All of this is easier to say than to do. We expect to continue searching for knowledge about impact for some time to come. In the next year, "Project Impact" activities will be designed to assist funders, researchers, and practitioners to understand thoroughly the components of

the impact assessment system. Individual roles and responsibilities will be clarified. To assist researchers with their task of assessing short term (interim) impact, we are developing a handbook to facilitate the assessment of impact that occurs during the lifetime of projects.

The Need for Specifying Expected Impact

Four years have passed since COVERD reported that they could not find documented impact of the results of millions of dollars of funded vocational education research and development activities. Congress used this lack of documented impact as the justification for mandating consideration of impact during the funding process. PL 94-482 requires that applicants for R & D contracts in vocational education "demonstrate a reasonable probability" that the contract will result in improved teaching techniques or curriculum materials that would be used in a "substantial number of classrooms or other learning situations within five years after termination of such contracts" (94th Congress, 1976). Since the imposition of that mandate, not only have additional millions of dollars been used to fund research in vocational education, but a substantial amount of money has also gone into researching how we can comply with PL 94-482 and how we can measure the impact of research and development. Researchers may quarrel with the language of the law and with its emphasis on immediate payoff for each and every research project, but few would argue against the need for demonstrating the impact of research programs, which seems to us to be the spirit of the law.

Starting With Programs

Perhaps we have spent too much time and energy trying to figure out how to measure project results or outcomes relative to the effort we spend on specifying program goals and objectives. The more clearly and consistently we can specify goals and objectives, the easier the job of specifying expected results.

Often project directors do not see a clear linkage between their individual projects and the overall plan of the funding agency, e.g. the state RCU. Individual project goals should relate to RCU program goals

and in turn these program goals should relate to the overall goals of the RCU. The identification of this linkage is one area which often has been overlooked or at least not clearly stated to individual project directors. Project directors often do not know that programs exist, let alone know the program goals to which they should relate. Defining programs and program goals should be one of the first steps in R & D planning.

Ideally each funding agency (e.g. RCU) would identify and define what constitutes its programs. Preferably this should be done during the priority development phase, as described by Ron McCage (1980). During this priority development phase, state RCU's generally gather input from conferences, previous research reports, educational institutions, and surveys of constituent groups in order to establish priorities for the following year. These priorities could then be organized into programs which would help conceptualize an R & D plan for the RCU for a specified period of time. Examples of such programs might be the service areas of agriculture, business, etc. as well as general programs such as special needs, work-education, administration, and interdisciplinary curriculum. Or they might be topics such as productivity, access, or job satisfaction.

Defining programs will assist project directors in identifying with the program on which they need to focus throughout their project efforts. It will also identify other projects which have been or are seeking to achieve the same program goals, thus fostering inter-project linkages. Defining programs in this way will help to establish the connection between the research process and its expected impact. Contributions to the well being of target populations will become clearer.

By identifying its own programs, each funding agency (e.g. RCU) maintains control of the type and number of programs for which it is responsible. Each program probably should have no less than two and no more than ten related projects at any one time. Each state will have a different number of programs and projects. The number of programs it funds should be based on assessed needs and money available.

The number of projects and their size should be based on the needs of each program and the speed with which these needs should be met.

Moving to Goals and Objectives

Establishing program goals is the next step which must be undertaken by the funding agency (e.g. RCU). Determining program goals not only aids the process of planning for R & D but also identifies the outcomes to be expected as a result of research related to the program. Program goals such as curriculum improvement would necessarily be broader than project goals. The expectation is that several individual projects will be designed to achieve different aspects of the same major program goal. This system provides a means by which related individual projects can tie their goals to each other and to the goals determined by the RCU.

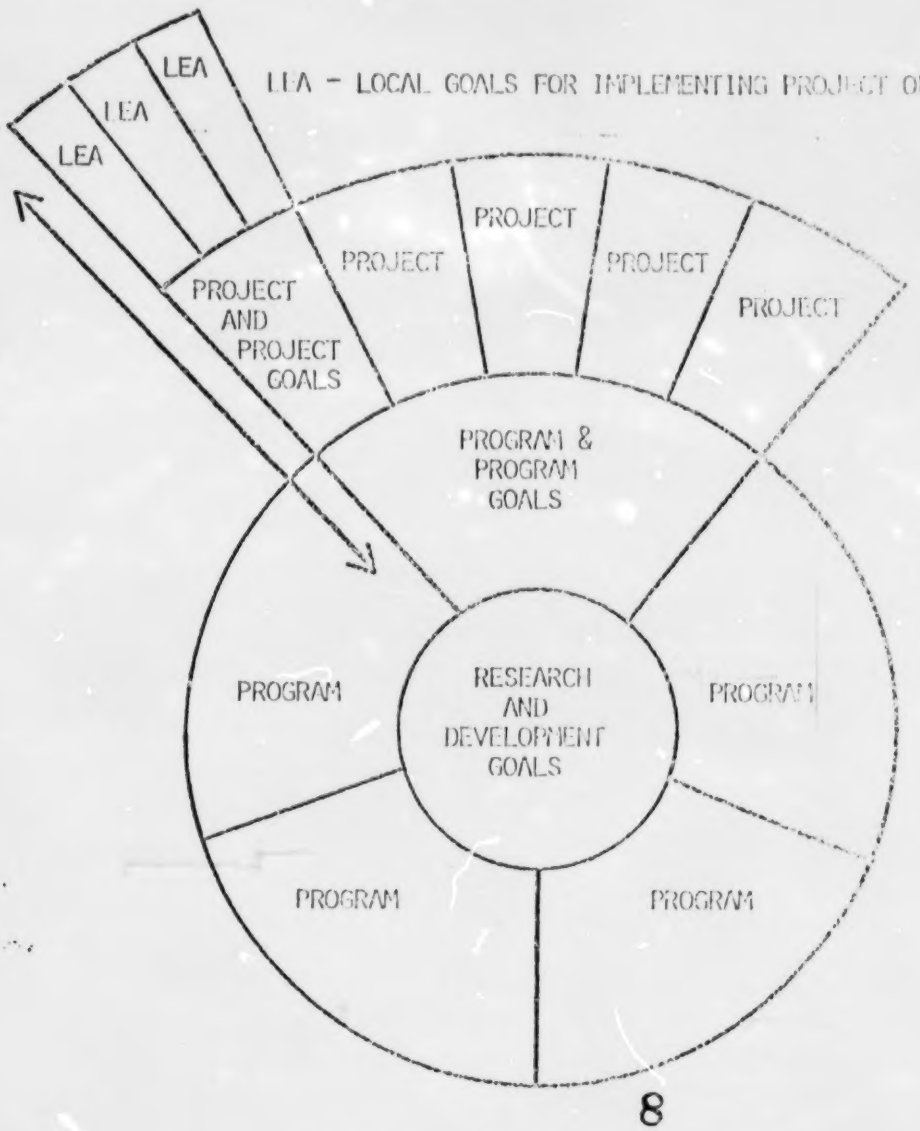
Project Goals

Once program goals have been established, specific objectives for meeting the goals can be determined. It is at this point that the linkage between individual projects and vocational education R & D programs can be clarified. It is likely that program objectives will serve as a basis for guiding the development of project goals. In the process of determining project goals, a project director can look at the "overall picture" (represented by program goals) and adapt these to local needs and goals; thus designing a unique set of goals for an individual project. Conversely, the funding agency will seek to be sure that the sum of individual project goals will meet program goals.

"The Lawn Party: The Evolution of Federal Programs in Local Settings," (Farrar, E., et al, 1980) describes how the translation of federal programs to local settings can be compared to a lawn party. The federal program is the occasion for the gathering, and all of the guests (local administrators, teachers, parents, board members) have come for different reasons, because they have different concerns at home. Thus, they each hope to adapt one federal program in different ways depending on their local goals and needs, which in turn leads to a broad range of possible outcomes. This process may be similar to the development of individual project goals. Although program goals and

objectives will help to guide the formulation of project goals, a negotiation process must take place among funders, researchers and practitioners to ensure that project goals meet local needs, while still maintaining the linkage between programs and projects. The outcomes desired by the funding agency, the outcomes desired by the agency conducting the project, and the outcomes desired by LEA practitioners are often somewhat different.

One might think of the goals of research as being the hub of a wheel, with the spokes being programs and program goals. A number of projects would reinforce each spoke and in turn each project would be supported by a number of local interpretations of the outputs of a project (see Program and Project Relationship model below).



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PROGRAM AND PROJECT RELATIONSHIPS

Assessing Impact

Using program goals as a basis for specifying results to be obtained through research also provides a means for assessing the impact of vocational education R & D, in the spirit of the mandated PL 94-482. Moore and Magisos (1977) supported this idea after reviewing the COVERD report. They concluded that "total evaluation ought to be programmatic, linking several projects together, so that summative evaluation is broadly based."

We define impact in our field as "measurable or observable changes/influences, positive or negative, that result from a vocational education R & D program improvement activity." It is possible to assess the impact of related individual projects, which combine to form a program, and to compare this assessment with the program goals which were intended.

There are several advantages of working within the framework of programs, rather than projects:

1. It helps to eliminate the temptation by RCU's to fund only low payoff, low risk projects because they have a high likelihood of showing a positive impact, in order to fulfill PL 94-482 impact requirements.
2. Individual project directors can see their project efforts as contributing to an overall plan and set of goals, thus tying their project goals and impact assessment to a larger whole.
3. It may aid project directors in setting more realistic and attainable expectations.
4. It encourages multiple-year efforts, thus relieving the unrealistic urge to solve persistent problems in a single year.

Although high risk, high payoff projects may not show impact within five years they have the potential to contribute a great deal to research knowledge. Assessing the impact of programs allows for funding some individual projects which may fail, without seriously affecting the overall attainment of program goals.

Focusing on programs and program goals does not eliminate the need for designers of individual projects to determine their own goals and methods of measuring impact. Each project needs to be responsible for identifying outcomes and assessing impact throughout the funded life of the project. Individual project goals and expected results (outcomes) will vary according to the: (1) program of which it is a part, (2) phase of the project (research, development, dissemination), (3) target audience, (4) proposed R & D outputs, (5) dissemination strategies, (6) intended effect upon the target audience, (7) extent of intended effect, and (8) method of proposed measurement. Addressing these considerations during the proposal development phase of a research project will assist proposal writers with the task of developing their required statements of intended impact (see Appendix A for samples of impact statements).

The intended immediate impact of a project relates to project goals and much of this impact could be assessed during the funded life of a project. The intended long range impact relates to program goals and can be assessed as part of the evaluation of the success of the total program. Time lapses between program phases can be utilized to measure changes in participant behavior and the effects of changes on their organizations. In addition, the measurement of effects resulting from the first phase of a program can be conducted during succeeding program phases (Knox, 1979).

We believe this approach to specifying the extended results of research in vocational education has potential for determining the impact of R & D. By concentrating on programs, rather than projects, we believe that the funding agency, those who conduct projects, and those who are the target audiences of project efforts are more likely to see positive R & D impact.

We recognize that documenting the results of research in vocational education is costly, particularly the documentation of

ultimate impact. Appendix A is a tentative model statement of impact to be included in a project proposal. Although it has been pared down from more grandiose models, the budget required would still be in the thousands of dollars, and this estimate does not include the time that the state staff and LEA staff would spend during the assessment.

We are really concerned with three aspects of impact. The first is to increase awareness of the concept of R & D impact and to convince proposal writers, proposal reviewers and project monitors that impact and the assessment of impact are needed. This first step is relatively inexpensive.

The second and third steps are the actual production of impact and the documentation of this impact. Both of these can be quite expensive for some projects. There seems to be little sense in spending $5,000 on the impact of a $10,000 project. It is essential, however, that each program (not necessarily each project) have impact, and have documentation of this impact. The costs of these activities must be borne somehow, even if it results in reduction of some research production. One of the major tasks faced by our project is how to reduce as far as possible the costs of impact and impact assessment while increasing awareness of the need for impact, increasing the amount of impact, and increasing the documentation of impact.

REFERENCES

Cheney-Stern, M.; Evans, R. "Effects of Continuity on the Impact of Vocational Education Research." The Journal of Vocational Education Research. Fall, 1979, vol. IV, No. 4, pp. 1 - 12.

Farrar, E.; DeSanctis, J.E.; Cohen, D.K. "The Lawn Party: The Evolution of Federal Programs in Local Settings." Phi Delta Kappan, November, 1980, pp. 167 - 171.

Knox, Alan B. "Accessing the Impact of Continuing Education". New Directions for Continuing Education. number 3, 1979.

Magisos, J.H.; and Moore, H.B. Evaluation of Vocational Education Programs. Columbus: The Ohio State University, The Center for Vocational Education, 1977.

McCage, R.D. Managing Program Improvement: One State's Approach. Columbus: The Ohio State University, The Center for Vocational Education, 1980.

U. S. Congress. Educational Amendments of 1976. P.L. 94-482.

Appendix A

PROPOSED MODEL IMPACT STATEMENT

Research Phase

The Project will disseminate the final report to the members of the State Vocational Education R & D staff. Within two months after delivery, a meeting of the State and Project staffs will be held to discuss the report and exchange ideas on the findings. The immediate impact of the Project will be to create an awareness of the state of the art (of this topic) by 100% of the State staff. This impact will be measured by attendance at the meeting and through observation of the discussion. The ultimate impact will be the use of this report by the State staff as a foundation for developing guidelines for a curriculum development project. This impact will be achieved through the State planning meetings and can be assessed by evidence of an RFP for a curriculum development project based on this research, within two years.

Development Phase

It is expected than an immediate impact of this Project will be an increase in communication between home economics teachers in the 5 field test schools and the Project staff, resulting in curriculum materials which are relevant to high school sophomore students' needs. This will be achieved by monthly meetings between the Project Director and teachers who are field testing the materials. Assessment of this impact will be made by an opinionaire sent to the teachers at the end of the field test period. It is expected that 90% of the responding teachers will indicate that there was ample opportunity for them to provide input into the revisions and that an open communication network had been achieved.

The curriculum materials will be disseminated to at least 150 high school home economics teachers through four regional workshops conducted by the Project Director. It is expected that 50% of the

participants will adopt the curriculum materials within one year of the workshop. This will be assessed by a follow-up mail survey. The ultimate impact will be a significant increase in the enrollment of the home economics child case program by students who have used the new curriculum materials. This assessment will be made by comparing results of a three year follow-up study with the baseline data collected in this study.

Dissemination Phase

The curriculum materials on food saiety will be disseminated to 100 or more practicing teachers of restaurant management at the secondary school level. Regional workshops will be held by the project director to provide an opportunity to discuss how the materials can be used in or adapted to individual classroom situations. It is expected that 70% of the teachers in attendance will try the materials and adopt them for use in the classroom the semester following dissemination. This will be assessed by a random sample telephone survey at the end of the semester. The impact of the curriculum materials on high school seniors enrolled in restaurant management will be an increase in knowledge of food safety principles. This impact will be assessed within one year by comparing the percentage of students who used the new curriculum materials and who passed the state licensing exam on food safety to the overall percentage of secondary students who passed the exam. It is expected that there will be a significant difference between the two groups in favor of those who used the new curriculum materials.

The ultimate impact will be that students will apply this knowledge of food safety on the job by practicing safe food handling. This impact could be assessed three years after dissemination by conducting case studies of five students who used the new curriculum. The case studies would include on-the-job observation and in-depth interviews with the student and employer to determine evidence of application. Funding for this assessment is not requested now, and conduct of it will be contingent on the needs of the state for documentation of ultimate impact.